THE Maple Leaf / LA Feuille d'érable

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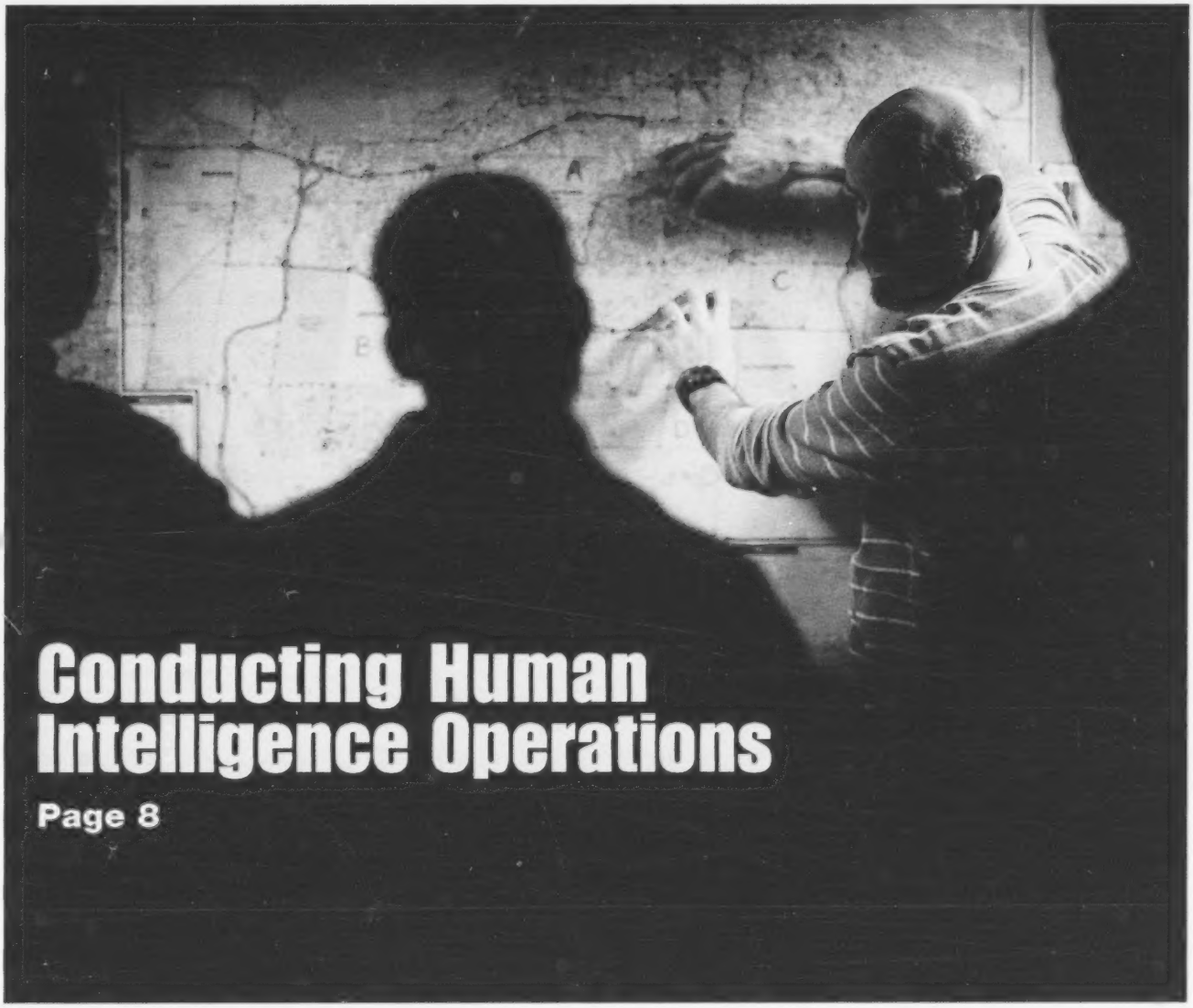

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National Defence / Défense nationale

Canada

HELP SHAPE THE FUTURE
DEFENCE POLICY

What is the future of Defence, and how should the Defence Team of tomorrow look?

Canadians will get to have their say in shaping the nation's defence policy through a series of collaborative and interactive public consultations, undertaken by the federal government.

On April 6, Defence Minister Harjit S. Sajjan, announced the Government of Canada's (GoC's) intent to consult with Canadians about the future of Defence.

The objective of the public consultations is to promote the GoC's commitment to open and transparent dialogue with Canadians, and other key stakeholders, including members of the Defence Team, in the development of the new Defence Policy.

These consultation sessions are focused on a number of themes and priorities but focus on three fundamental areas of enquiry:

- What are the main threats and challenges to Canadian national security?
- What role do you see for the military in addressing potential threats?
- How should the Canadian Armed Forces be equipped and resourced to carry out these tasks?

These discussions will take place in cities across Canada from April to July. All Canadians are encouraged participate online.

To learn more about contributing, visit the GOC's newly launched consultations portal at **www.Canada.ca/defence-consultations**. ◆

Bravo Zulu

This month's Bravo Zulu goes to six CAF members currently deployed to Operation UNIFIER in Ukraine. Corporal Steve Blaney, Sergeant Yannick Dodier, Master Corporal Claude Cayer, MCpl Daniel Poirier, MCpl Jennyfer Russell and Sgt Yann Gauthier received a commendation from the Ukrainian Defence Minister for their devotion, professionalism and their high quality of instruction. Also present was Defence Minister Harjit S. Sajjan.

These outstanding instructors share our Canadian military values and strengthen the bonds between the Canadian and Ukrainian Armed Forces. They proudly represent the constant efforts of the personnel from Joint Task Force Ukraine ROTO 1 who are deployed until August.

Q. Why should members of the Defence Team use iAsk?

A. iAsk is your opportunity to be heard!

iAsk allows members of the Defence Team to submit important questions impacting the workplace, or the future of the Defence Team to senior Defence leaders. Questions and answers will be featured on the iAsk page of the Defence Team intranet.

Submitting your questions is quick and easy.

Visit the iAsk page on the Defence Team intranet site at **dt.mil.ca** (Let's Talk tab) for more information.

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COVER: A team leader briefs his source handling team on the route of travel to meet with a source during a training exercise.

DEFENCE HIGHLIGHTS: BUDGET 2016

PHOTO: Cpl Mukael J. Maclsaac

Budget 2016 was tabled on March 22, outlining commitments to provide security for Canadians at home and abroad, and to ensure the CAF has the capabilities it needs to carry out missions.

The 2016 Budget contained several highlights of note for members of our Defence Team.

CONSISTENT AND PREDICTABLE FUNDING

The government is respecting its commitment to consistent and predictable funding for National Defence. This includes a planned two per cent increase as a result of the annual defence escalator, which is calculated on the basis of key operational expenditures. The full amount of the defence escalator for fiscal year 2016-17 is $361.1 million.

Of capital expenditures that had been planned over the next six years, $3.7 billion has been moved to later years to match the timing and delivery of key capital projects. This was done to protect this funding, and to ensure it is available when needed. These funds remain reserved for the exclusive use of DND, and can be requested as needed – even before the six years are up, should that be required. The government remains committed to accelerating the procurement process to ensure members of the CAF are well-equipped to perform the missions asked of them.

Overall, spending in 2016-17 is currently expected to be about the same as 2015-16, or $19.7 billion. Of that, $18.6 billion has already been requested in the Main Estimates, which were tabled earlier this month. As usual, requirements not identified in time for those Estimates will be sought later.

OP IMPACT AND INFRASTRUCTURE FUNDING

The budget confirmed an additional $306 million for Operation IMPACT and announced $200.5 million for infrastructure, both over two years. The latter includes $50 million to upgrade or construct military housing across Canada. The funding will also address CAF infrastructure needs to support readiness, such as airfields and ramps, and infrastructure, such as armouries, to support the Reserve Forces.

HIGHLIGHTS OF INTEREST

Other Budget 2016 highlights, which fall outside the mandate of the DND/CAF but may be of interest to Defence Team members, include $78 million over five years to reopen Veterans' Affairs service offices in Charlottetown, Sydney, Corner Brook, Windsor, Thunder Bay, Saskatoon, Brandon, Prince George and Kelowna and to open an additional office in Surrey. Also, outreach will be expanding to veterans in the North and additional case managers will be hired to reduce the overall client-to-case manager ratio. The Disability Award maximum was increased to $360 000 in 2017 for injuries or illnesses caused or worsened by military service, and access will be expanded to higher grades of the Permanent Impairment Allowance to better support veterans who have had their career options limited by a service-related illness or injury. Budget 2016 provides additional funding for VAC's Earnings Loss Benefit (ELB) program, mainly to increase the long-term disability benefit from 75 per cent to 90 per cent of salary.

Further, the budget includes more than $77 million over five years to improve the security of government networks and information technology systems. Over $106 million will be provided for the International Police Peacekeeping and Peace Operations Program.

In response to the commitments outlined in the budget, DND/CAF will work to ensure that Canada maintains a modern, combat-effective, multi-role military able to conduct the missions.

To read highlights and the plan in its entirety, visit the Budget 2016 website at **www.budget.gc.ca**. ◆

— Harjit S. Sajjan, Minister of National Defence

Experimental X-Ship ADVANCING INNOVATIVE NAVAL CONCEPTS

For the next five years, HMCS *Montréal* will have an exciting role to fill along with its regular naval requirements.

Montréal has been named the Royal Canadian Navy's Experimental Ship – or "X-Ship" – a program designed to advance innovative and leading edge naval concepts in all areas of warship deployment, crewing and sustainment.

"To do this, we have been allotted a five-year period within which to build and execute a program that builds on existing trial concepts and develops new ones," says Lieutenant-Commander Lorraine Sammut, Senior Staff Officer Operations at the New Capability Introduction Detachment in Esquimalt, B.C. "Specifically, X-Ship will be tasked to conduct experiments that fall outside of normal fleet development activities, and be focused on supporting future classes of ships such as the Canadian Surface Combatant and Joint Support Ship."

In the short-term, many of the trials conducted will focus on human factors, such as variations of crew size and impacts on crew rest and performance, as well as some operational trials.

"One of the driving tenets behind X-Ship is to explore crew modelling initiatives – future practices – that are forecasted to be employed in our next classes of ship," explains LCdr Sammut. "One of the challenges we face is forecasting the level of human effort required to conduct a certain task, given that future ships will have increased levels of automation. To forecast the baseline, the navy, in partnership with Defence Research and Development Canada, uses a crew modelling prediction software and inputs what we already know to be true."

Medium- and long-term horizons will see an increased focus on operational and technical type trials, including structural health monitoring, environmental effects on the ship and information systems trials.

"In the long-term, we anticipate that the conduct of naval operations will be shaped by the data collected from these experiments and trials," says LCdr Sammut. "As we move towards new ship design, one emerging trend is the shift to increased automation across a variety of systems. By default, increased automation equals decreased crew size and a requirement to employ specialized teams depending on the mission at hand."

Crewing configuration will vary over the five-year program and is dependent on the crewing experiment being conducted at the time. Notwithstanding, X-Ship will remain crewed by CAF personnel, and outside of the crew experiments being conducted, *Montréal* will be crewed as usual for Halifax-class frigates.

In support of future platforms like Canadian Surface Combatant where crew size is forecasted to be smaller than the current frigate model, one crewing concept being tested early in the program is a reduced crew complement.

"The goal behind any crewing model is to arrive at an appropriate and sustainable complement to execute the variety of normal readiness tasks encountered during naval operations," says LCdr Sammut.

The innovative X-Ship program will benefit the RCN in many ways as streamlining capabilities and finding new efficiencies allows increased effectiveness across a wide array of naval operations.

"In the same vein, it also allows the RCN to determine, with some empirical accuracy, where certain concepts fall short and the diversity of operational effectiveness is potentially compromised, thus requiring further work," explains LCdr Sammut. "Either way, providing a platform to advance innovative efforts is a tremendous win in the eyes of force developers and our operational community. Likewise, and on the heels of our successful modernization of the Halifax-class, it allows the RCN to align itself with those successful advances made by our allied partners."

Although X-Ship will have a dedicated trial program, it will not be completely removed from everyday naval requirements and will continue to participate in scheduled engineering repair, docking work periods, fleet training exercises and support to the new shipborne Cyclone helicopter.

"In fact these opportunities lend a considerable hand in providing the appropriate test environment for many of the trials to be conducted," says LCdr Sammut.

In recognition of the unique nature of the program, Vice-Admiral Mark Norman, Commander of the RCN, has directed that a special badge be designed for X-Ship. Details about the badge and what it will look like are expected to be announced in the coming months.

It's a busy and exciting time for *Montréal* crew members and supporting staff ashore as the frigate moves forward with the X-Ship program, leading the RCN in ground-breaking experiments and trials.

HMCS *Montreal* has been named the RCN's Experimental Ship a program designed to advance innovative and leading edge naval concepts in all areas of warship deployment, crewing and sustainment.

FACE OF OPERATIONS

HOW A MILITARY MOTHER COPES WITH DEPLOYMENT

The following is a feature by Master Corporal Jennyfer Russell, a medical technician from 5 Field Ambulance, Valcartier. MCpl Russell is deployed as a JTFU Instructor on Op UNIFIER in the Ukraine.

By MCpl Jennyfer Russell

Truly, I do not feel there are any differences between being a deployed woman in the army and a man who's doing the same thing. We all have families; a reality that we temporarily leave behind. Emotionally, our gender difference does not make it any easier.

I'm often asked how I balance work and home. No matter how strongly you may feel about a job there is no such thing as a perfect career situation, it's all about life-work balance. A deployment is very tolerable when you focus on the positive aspects, keep your chin up, and perform the tasks to the best of your abilities. Depending on the mission and the area of deployment, we have many opportunities to keep in touch with our families. Thank goodness for the advances in communications technology.

If there is one thing we have to learn to do as deployed mothers it's to learn to focus on the things we can control, and sometimes let go of things back home that are outside our reach. These are things such as: was the house cleaned; did the children eat well; did the dog get enough exercise? A more difficult example is when the children tell you that they had a disagreement with their father. It is tough to accept, but no matter how much you would like to fix things, you cannot. The key is to listen, support and encourage. A friend once said: "Everything will be taken care of but managed differently; the rest is small stuff".

I was once the parent at home with two young children, while my husband deployed multiple times. I can understand that a spouse may experience hard times and it may bring a wide range of emotions. It is also hard for the children. So far, our two teenagers have experienced seven deployments. As I left for Ukraine, my youngest daughter told me, "the house is so quiet without you; I'm never going to do this to my kids". Mothers often take up a lot of space in the house, leaving less room for the father. In most cases, a deployment serves to strengthen father-daughter (children) relationships.

I was first deployed to Afghanistan, then Nepal, and now I am progressing through a third deployment in Ukraine – three very different experiences. Everyone has their own way to cope with the first day. I find the first day is the hardest moment, the hardest hour, the hardest day of the next six months of my life. Hugging my children and husband until the absolute last possible second before departure and knowing that I will be missing out on so many memories is simply heartbreaking. I have to remain strong for them, as they do for me. They are always in my heart, but until my return, farewell it is to my loved ones.

A few hours later when the initial, most difficult, period subsides, you can feel the spirit of camaraderie instilled in everyone. We talk and laugh amongst colleagues and friendships develop, bonds are created. The support of friends and family is how I overcome the next six-to-eight months of deployment. More often than not, comrades inevitably become your second family. Very few people can understand this strong bond.

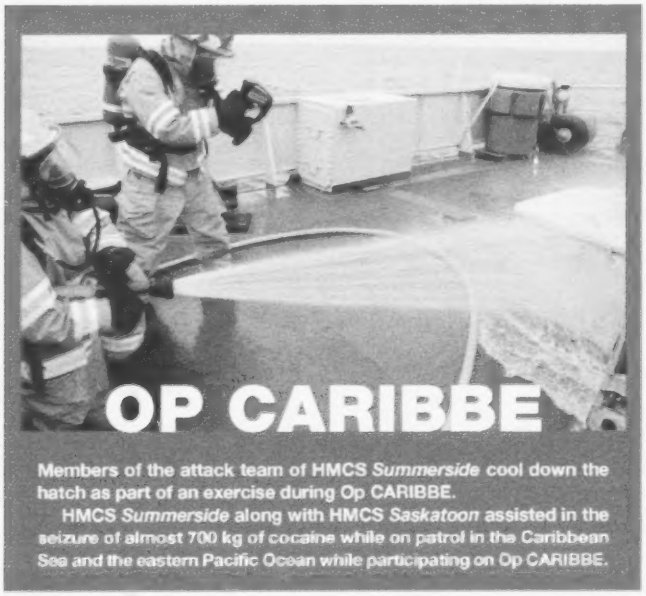
In a few months, I will look back and realize that it actually went quicker than I thought. I will be back with my family enjoying every minute with them, because it's not the amount of time that I spend with them, but the quality of it that matters most.

When you think about it, as a mom or dad, we cope the same way: trust in your spouse, trust in the good values you've instilled in your kids, and work hard until the deployment to finishes. ◆

MCpl Jennyfer Russell

PHOTOS Combat Camera

MCpl Jennyfer Russell teaches first aid to members of the Ukrainian Forces during Op UNIFIER at the International Peacekeeping and Security Centre (IPSC) near Lviv, Ukraine.



OP CARIBBE

Members of the attack team of HMCS *Summerside* cool down the hatch as part of an exercise during Op CARIBBE.

HMCS *Summerside* along with HMCS *Saskatoon* assisted in the seizure of almost 700 kg of cocaine while on patrol in the Caribbean Sea and the eastern Pacific Ocean while participating on Op CARIBBE.

THE TRANSITIONING OF AIR TASK FORCE-IRAQ

The Canadian Armed Forces (CAF) officially marked the transitioning of the Air Task Force-Iraq mission during a parade March 5 in Kuwait.

Lieutenant-General Michael Hood, Commander Royal Canadian Air Force, presided over the parade, which commemorated the contributions of all CAF members who have deployed to conduct and support air operations since the beginning of Operation IMPACT.

"I am immensely proud of all the men and women who have deployed to conduct and support airstrike operations as part of Air Task Force-Iraq. I thank all those who have made contributions to this important mission and appreciate greatly the ongoing commitment of those who continue to work with our partners to improve the security of Iraq and the region," said Colonel Shayne Elder, Commander, Air Task Force-Iraq.

Air Task Force-Iraq will continue to operate aircraft in support of coalition air operations. The CC-150T Polaris supports coalition air assets in the region with aerial refuelling and two CP-140 Auroras conduct intelligence, surveillance, and reconnaissance missions based on identified and pre-determined areas of interest.

As directed by the government, the CF-18 Hornets ceased airstrike operations on February 15, and departed the region in a phased approach. ◆

PHOTO Op IMPACT

Canadian CF-188 Hornets prepare to take-off from Kuwait on their way to Romania on March 7.

BUSY WEEK FOR 103 SEARCH AND RESCUE SQUADRON

Always on call 24/7, the Outcasts from 103 Search and Rescue (SAR) recently had their endurance tested as they were tasked seven times in seven days.

The Gander RCAF unit was extremely busy being tasked a total seven times in seven days with such things as a marine medevac 350 nautical miles off St. John's, and several medevacs on the lower North shore of Quebec and Southern Labrador.

During this time, the CH-149 Cormorant helicopters based in 9 Wing Gander were dispatched across Newfoundland and Labrador, accumulating more than 35 hours of mission flying time.

"This was a very busy operational tempo for this time of year," said Major Jean Leroux, 103 (SAR) Sqn, commanding officer. "It is through our rigorous training program that we can successfully face multiple SAR tasking in a very short period of time. 103 Sqn is an elite SAR unit that maintains a high degree of intellectual and physical aptitude. Our stamina was surely put to the test, especially since most of those missions were in very challenging weather conditions. I am proud of the leadership throughout our crews that kept our mission execution safe and effective. I am also thrilled about the support we received from our IMP technicians that put the helicopters on the ramp, serviceable in mission after mission at any time of the day or night."

Crewmembers from 103 SAR Sqn prepare to assist in an emergency.

VEHICLE TRIALS SHOW ARMY'S WAY AHEAD IN THE ARCTIC

The Canadian Army (CA) is working with two new vehicles in a long-term effort to ensure soldiers are able to move effectively across the difficult Arctic terrain.

The CA purchased eight Argo XT, an all-terrain, support vehicle, and 20 of the D900, a diesel-powered snowmobile in what is being referred to as a "buy and try" arrangement.

The Army is not planning to make these vehicles a permanent part of its arsenal. Their use will instead help in determining what specific features and capabilities will best serve its needs in the far north explained Major Peter Chan, director of the CA's ongoing Arctic Mobility Project.

The Arctic's isolation and climate have always presented challenges to the CAF, Maj Chan said. The region has a great deal of what he calls "marginal terrain," meaning ice sheets, various types of snow and muskeg, an Algonquin term for the grassy bogs formed over the past 10 000 years in areas that were covered by glaciers in the last ice age.

"Basically, just a very wide variety of terrains," said Maj Chan. "Too many for one vehicle."

Under the current project timeline, new vehicles will be in service by 2025. They will replace the BV206, a tracked, all-terrain transport vehicle that first entered service in 1983. The BV206 fleet was upgraded between 1998 and 2001. Funding to further extend its active life to at least 2022 by replacing engines and transmissions was recently approved.

Despite those upgrades, Maj Chan explained, the fleet's age means replacement parts are getting harder to come by and so the Army is acting now to ensure effective replacements are selected in a timely manner. The Argo XT and D900 will also fill any interim needs arising before the new vehicles arrive in 2025.

Half of the Argo XTs are in use in Yellowknife, Northwest Territories by members of the CAF's Joint Task Force (North) and the rest are at CFB Wainwright, Alberta. Manufacturer Argo has adapted the XT for CA roles by adding an enclosed cab, a kit that enables it to carry stretchers, and a military fuel can holder.

"We're going to trial them in those locations and assess what the capabilities are in marginal terrain to help us define our real, high level mandatory requirements for future purchases," said Maj Chan.

The D900, is unique among snowmobiles in that it is purpose-built for military use. Its diesel engine, also provides greatly increased fuel efficiency, which is a major consideration in Arctic operations.

"Few manufacturers make a diesel snowmobile and fuel is a precious commodity up North so we're assessing how a diesel machine works in the Arctic environment. Anything we use up in the northern region we have to bring with us. It's not as simple as going to the gas station and filling up."

Over the course of winter 2015-2016, the D900 will be used by Canadian Ranger patrols and as part of the Army's Arctic observer and advisor course, in which soldiers receive Arctic-specific survival training.

The D900 and the ARGO XT will also be tested by Defence Research and Development Canada (DRDC). The vehicles will be part of the 2016 Joint Arctic Experiment (JAE). Taking place every two years, the JAE is an opportunity to scientifically assess equipment from all three branches of the CAF.

While the Army assesses the vehicles' suitability to the environment, Maj Chan says, DRDC will be making more technical assessments of features such as fuel economy.

"For 2016, the Army's JAE contribution will be those two vehicles," he said. "DRDC will look at them from a purely scientific point of view whereas I'm just looking at it from a global army perspective."

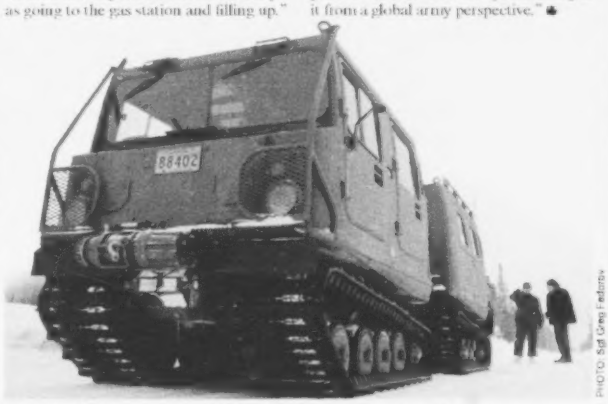


PHOTO: Sgt Greg Fedorko

The BV-206 all-terrain vehicle, which carries troops and equipment over snow, swamps and other challenging terrain, will be out of service by 2020. In anticipation, the Canadian Army is conducting tests to determine what should replace it.

TRAINING VESSELS GIVES CADETS AN UNDERSTANDING OF SEAMANSHIP

There is no better way to gain an understanding of the sea than through sailing, and the Sail Training Vessel (STV) *Goldcrest*, gives RMC cadets that chance.

For several weeks this summer, Naval cadets from Royal Military College, Collège Militaire Royale and the Subsidized University Training List will join *Goldcrest* to learn the fundamentals and enjoy the Southern Gulf Islands and local waters while building integral foundations in leadership, team-building and motivation.

Although sailing vessels no longer play a role in naval warfare or modern maritime security, *Goldcrest* still provides valuable experience for junior officers and seamen.

Like similar programs available to Air Force and Army cadets, the purpose of the RCN's Summer On-the-Job-Experience program is to expose Naval Cadets to various activities associated with the Navy in conjunction with their career training – sailing onboard *Goldcrest* will be just one of the many ways that cadets will get a taste of the Navy during their summer break from academics.

The STV *Goldcrest* is a CS-36 sloop-rigged yacht built in 1982 and purchased by the Royal Canadian Navy in 1983, and has been adapted for sail, adventure and navigation training. With accommodation for four-to-six sailors, the vessel is fully equipped to take on her next mission providing on the job experience for cadets in the Regular Officer Training Program this summer.

The Navy currently maintains three training vessels: the STV *Tuna* in Halifax, N.S., and HMCS *Oriole* and the STV *Goldcrest* at CFB Esquimalt.

PHOTO: LS Beckstead

Sail Training Vessel *Goldcrest* heads out to sea.

ASSISTANT DEPUTY MINISTER (INFRASTRUCTURE AND ENVIRONMENT)

ADM(IE) IS THE SOLE MANAGER OF ALL DEFENCE REAL PROPERTY ASSETS

These articles are continued from the March issue of *the Maple leaf*, as we feature more stories highlighting the hard work ADM(IE) has been doing to prepare for this fundamental shift.

Over the past several years, DND has been gradually bringing together, its more than $26 billion in real property assets, ranging from buildings and armories to roads and works into one portfolio. On April 1, the remaining balance of the DND's real property portfolio was officially transferred to ADM(IE), making it the sole real property manager for the entire Defence real property portfolio.

RADIATION TESTING IN SUPPORT OF OPERATION UNIFIER

ADM(IE)'s Directorate of Nuclear Safety (D N Safe) is responsible for the management of the DND/CAF ionizing radiation safety program, providing radiological/nuclear expertise in support of DND/CAF operations.

In November 2015, the Directorate of Force Health Protection (DFHP) conducted a health and hazard assessment for Operation UNIFIER, Joint Task Force Ukraine. As part of this assessment, Canadian Joint Operations Command tasked D N Safe to: determine the radiological risk present within the area of operations; ensure that any exposure of deployed personnel to ionizing radiation remain below the limits stated in departmental radiation safety policy; and determine if radiation specific health protection measures are required for current and future rotations. Although evaluating radiological risk is a standard part of the overall hazard assessment for all deployed operations, there was a particular concern in the case of Op UNIFIER due to radioactive fallout from the 1986 Chernobyl reactor accident and local unsubstantiated reports of nuclear weapons testing dating back to the Cold War era.

D N Safe maintains a technical assessment team capable of deploying domestically and internationally to provide radiological and nuclear analysis, advice, training and support to DND/CAF operations and other government partners. Two members of the assessment team, were deployed to Ukraine with highly sensitive detection equipment to assess radiation levels within the areas of CAF operations. The team conducted mobile radiation surveys of the main camp in Starychi, including surrounding training areas and ranges, as well as the explosive ordinance disposal training site in Kamyanets-Podilskyi. They also conducted detailed radiation surveys of buildings and living spaces and collected soil samples from various sites for subsequent radiochemical analysis at Royal Military College.

The team's radiological health and safety assessment indicated that radiation levels present in the Op UNIFIER area of operations were similar to the normal natural background levels found throughout Canada and no specific health protection measures were required.

"Radiological risk assessments of this type, in conjunction with DND/CAF nuclear and ionizing radiation safety policies, are essential to protect deployed forces from harm associated with exposure to ionizing radiation," said Captain Travis Cunning, Nuclear Safety Officer. ♣

ARCTIC/OFFSHORE PATROL SHIPS PROJECT ON TRACK

The new deepwater refuelling facility for Arctic/Offshore Patrol Ships (AOPS) project is on budget, on schedule, and will be ready for the first AOPS in 2018.

In 2007, DND announced that Nanisivik, Nunavut, would be the site for the AOPS project. This facility will provide the Royal Canadian Navy (RCN) with enhanced capability to conduct patrols in Arctic waters.

Shortly after the Nanisivik announcement, engineers from ADM(IE) met with AOPS project management office staff to define the requirements for an Arctic refuelling facility. ADM(IE) engineers have a long history of working in the North, largely gained from recent years working on the Distant Early Warning Line Remediation project. Thanks to this experience, ADM(IE) engineers were able to quickly provide advice on infrastructure, logistics, costs and schedules.

Rodney Watson, project manager, Directorate Construction Project Delivery (DCPD), notes that, "DCPD worked closely with the AOPS project management office to define infrastructure requirements. The team then travelled across Nunavut to meet with stakeholders, who provided feedback on the proposal. Most importantly, the team spent a considerable amount of time in Arctic Bay, meeting with many people and groups to explain the project." The project proposal was submitted to the Nunavut Impact Review Board, which granted approval to proceed in October 2013.

In 2014, the construction contract was awarded to Almiq Contracting of Iqaluit, Nunavut. Almiq wasted no time in getting equipment to the site. By the end of October 2014, they had assembled a 60-person construction camp and a heavy equipment fleet had arrived by sealift. The first full construction season was completed in October 2015. Mr. Watson adds that, "it is an exciting time for everyone; after many years of site visits, the facility is finally taking shape. The work brings a great sense of satisfaction to the ADM(IE) team and to the AOPS project management office, as many years of planning and preparation have gone into the development of the project, and we were all anxiously anticipating the day when we could finally put shovels in the ground."

Working in the Arctic brings a number of unique challenges, quite different from those in more southern locations. In the summer, the contractors take advantage of 24 hours of daylight to maximize production. But the location also presents a daunting set of difficulties for them to overcome. Icebergs in the bay were frequent in 2015, and one even made contact with the jetty. Local wildlife monitors have been hired and are on regular patrol to ensure that animals, such as polar bears, stay away from the worksite. Winds easily reach 100 km/hr and often halt construction, and as Mr. Watson adds, "Internet and phone aren't exactly 'high-speed'."

Mr. Watson goes on to observe that what stands out to the team is the very real need for consultations with the community. The time spent meeting Arctic Bay residents and community leaders proved priceless. The project engineers learned what was important to these residents, and how they perceived the construction work and future ship activity. The project plan was adjusted to take their concerns into account, and today work is well underway, with a very solid relationship existing between the contractor, the community and DND. ♣

TEME BUILDING: ON TIME AND UNDER BUDGET

The Transport Electrical Mechanical Engineering (TEME) building at CFB Halifax was completed both on time and under budget, setting the stage for additional base construction initiatives.

The successful construction of a new $71-million TEME building proved that a challenging military construction project can be completed both on time and under budget. The Halifax TEME building project, consolidates vehicle and equipment maintenance services in one 11 935 m², two-storey building, and replaces nine largely obsolete locations. Construction began in June 2012, and the building was occupied, ahead of schedule, in April 2014.

Rock Duchesne, project manager at the Directorate of Construction Project Delivery (DCPD), noted that the use of the modified design-build process was instrumental in bringing this project in millions of dollars under budget.

Under the modified design-build process ADM(IE) contracts the design and construction of a project to a single company. That company then completes the entire design prior to any construction taking place. The design is then reviewed by ADM(IE), and once project implementation is granted by the department construction begins. Because this process uses a single contractor for both the design and construction phases of a project, it saves DND time and subsequently, money. The Halifax TEME building project expected to cost $96.8 million, ended up costing roughly $71 million.

The cost savings were realized without affecting services or building quality. Originally designed to meet LEED Silver certification, the Halifax TEME building was recently granted LEED Gold certification – an exceptional achievement, considering the building's environmentally challenging function and its location on a brownfield site.

"The building, which is half garage and half maintenance bay, is designed with a focus on environmental responsibility and energy savings," said Mr. Duchesne. "Overall, the new building will save money in operating costs, both through lower heating costs and because the new single structure replaces nine older, energy inefficient buildings."

And there is more positive news on real property for CFB Halifax. Just as the TEME project was completed, work started on a new junior ranks housing and training facility slated for completion this year. The project involves the construction of three new buildings. The first complex, of more than 21 000 m², will include living quarters and dining, galley and mess halls. A second, smaller building will house a retail store, snack bar and financial services. The third building, to be completed after the first two, will be a modern seamanship training facility. The construction contract is expected to create 380 local jobs. ♣

A FRESH APPROACH TO MANAGING CONTAMINATED LAND

The management of DND's contaminated lands is a responsibility that was shared among seven different organizations, and now this function lies exclusively with ADM(IE).

They will manage contaminated sites, groundwater monitoring programs, the construction of engineering controls to manage contaminated lands, and the environmental impact of munitions constituents.

ADM(IE)'s new centralized business model for real property management will significantly reshape traditional organizational structures, relationships and thinking associated with the delivery of real property programs. The contaminated sites portfolio is no exception.

While all environmental activities and staff functions associated with real property will now be managed under ADM(IE), broader environmental responsibilities and their implications will not. This includes training, operations, oversight, and material procurement. These functions, as well as local service delivery for the management of contaminated sites, will remain within their current Level 1 centres of responsibility.

Centralized management will eliminate many administrative layers and steps, allowing ADM(IE) to optimize performance and efficiency. These changes will provide value for money and better align the Department's environmental standards with the latest industry standards.

"Abolishing organizational barriers to planning and execution focuses our energy and makes it easier to share best practices and bring a fresh perspective to the management of contaminated lands," said Ranjeet Gupta, director of Contaminated and Legacy Sites Project Delivery. "DND will now be in a much better position to draw upon the full breadth of our community's experience in innovative remediation and liability management solutions," he added. "I am excited at the prospect of improving our services and look forward to working more closely with the Department's community of environmental professionals."

IEBM: A NEW BUSINESS SOLUTION FOR REAL PROPERTY MANAGEMENT

ADM(IE) has developed the Infrastructure and Environment Business Modernization (IEBM) project to help manage the centralized management of DND's real property.

The purpose of IEBM is to develop a robust information-management system that will replace or consolidate obsolete applications and provide a common approach and common business processes for tracking the maintenance, life, safety, and code compliance of DND's real property portfolio.

"We all worked hard to get ready for FOC (Full Operational Capability) on April 1, but the work is not over yet," says Doug Lloyd, Director General Engineering Services. "Fundamental to this transformation is the implementation of a new, modern information management system that will support ADM(IE)'s real property decisions well into the future."

In 2015, ADM(IE) conducted a series of workshops to identify expectations for IEBM and to define requirements for the new information management system. IEBM is currently in the implementation phase, which involves the design, building, and testing of the new platform. This new platform is expected to be deployed between November 2016 and March 2017.

STRATEGIC ASSET MANAGEMENT FOR THE FUTURE DEFENCE ESTABLISHMENT

As ADM(IE) transforms, the goal of Director General Portfolio Requirements (DGPR) is to boost return on investment, and ensure that DND is spending its budget wisely.

In the past, the management of DND's real property assets rested with nine separate custodians, each with different ways of doing business. After achieving FOC on April 1, ADM(IE) is now the sole manager of all DND real property assets. This centralization will enable ADM(IE) to establish a consistent way of doing business across the Department's entire real property portfolio. The team at DGPR manages long-term (15–30 years into the future) real property planning for DND by making sure assets are well located, by managing routine disposals, by consolidating building uses, and by planning the best way to buy and sell DND real property.

Looking at the Department's real property portfolio with a long-term outlook lets ADM(IE) consider things like how much real property assets are dedicated to warehousing, how much is spent on offices versus hangar facilities, what problems and issues need to be addressed, what condition are the assets in, how much is DND spending, what facilities does it already have and what does it need? These are all good things to know when you are planning the future of one of the largest real property portfolios in the Canadian Government. Centralization will also help ADM(IE) update its data and create consistent ways of defining things like asset buildings, water plants, jetties, and hangars across the Department's extensive real property portfolio.

Lieutenant-Colonel Jérémie Emond outlined how DGPR is "collecting information on strategic assets to make better and more informed decisions about where we will be investing resources. While strategic assets used to be divided amongst all custodians of real property across the country, we are now trying to have more of a portfolio view to make informed decisions. This new centralized way of doing things will build a sound foundation for making decisions about the Department's long-term real property investments."

DGPR is poised to offer advice to senior management so that they can make wise choices on the best way to fulfill DND's infrastructure needs, now and over the coming decades.

ADM(IE) PROCUREMENT STRATEGY GETS AN UPDATE

Under ADM(IE)'s centralized real property model, the Directorate of Infrastructure and Environment Procurement Strategies (DIEPS) plays the key role of optimizing facilities management.

DIEPS is supporting the ADM by developing a Real Property Procurement Strategy — a new, overarching approach to managing procurement. Under this ambitious plan, DIEPS will provide advice, guidance, tools, and training to support the issuance of contracts at the base and wing level. This will allow DIEPS to lead the way in achieving cost reductions by bundling real property contracts at the national, regional, or local levels. DIEPS will leverage private-sector capabilities with the realignment of internal resources to achieve the right balance of in-house and external real property contracts. This new strategy will allow DND to be smarter about the way it contracts for infrastructure services.

"Although DIEPS is still a relatively new organization, the directorate has already spearheaded significant change, delivering millions of dollars in savings as part of centralization and transformation of real property within DND," said DIEPS Director, Marie-Josée Corbeil. "As the lead on Defence Renewal Initiative 4.3 [achieving efficiencies through consolidation of base and wing facilities management contracts at the national, regional, or local levels], DIEPS is improving our procurement process and finding ways to determine if we are meeting our goals of cost avoidance, development of new, more efficient procurement strategies, service standards, compliance, and adoption of the DRMIS Material Management Module within ADM(IE)."

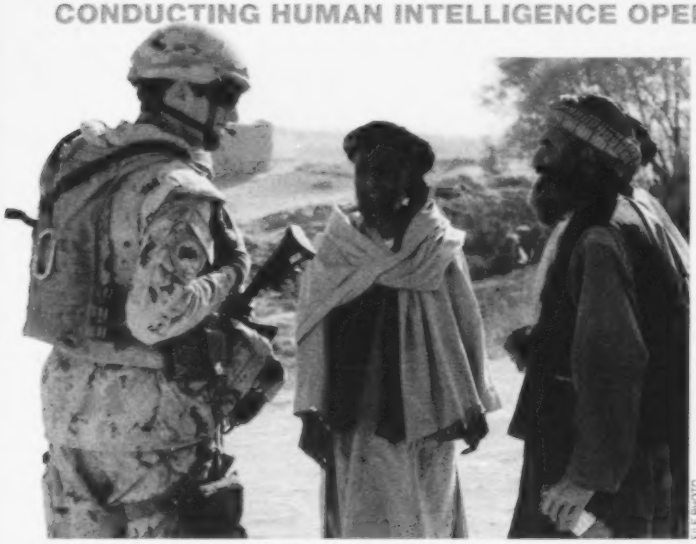
One example of these forward-thinking initiatives is electronic procurement (e-procurement). Once Public Service Procurement Canada (PSPC) has done the bulk of the front-end work in setting up contracts and standing offers with suppliers and getting them on-board, DIEPS will help procurement people or base supply procure common items electronically, much like online shopping is done today. ADM(IE) sees automatic payment to suppliers as something they can work toward. DIEPS is eager to act as a pilot organization for this exciting initiative, which will not only put them at the forefront of a new technology, but will also allow ADM(IE) to help shape the way electronic tools are delivered, and to ensure that the needs of bases, wings and personnel are met.

Recently, DIEPS has also been involved in developing a contractual database. This database will help the Department find opportunities to bundle multiple contracts, creating savings which can be reinvested in the Department.

Throughout ADM(IE)'s transformation, "our team is making certain that stakeholders are consulted and that current procurement processes are made better," adds Ms. Corbeil. "The primary goal of ADM(IE)'s Procurement Strategies team is to deliver the tools, templates, and expertise that front-line personnel need to modernize real property procurement at National Defence. We are proud of our progress in just one short year!"

JOINT TASK FORCE X:

CONDUCTING HUMAN INTELLIGENCE OPERATIONS WORLDWIDE



FILE PHOTO

A deployed CAF member collects information from an Afghan local during Op ATHENA.

The current environment in which the CAF operates is more complex than ever and commanders at all levels require detailed situational awareness to support their decision-making; increasing the demand on various intelligence collection assets to provide relevant and timely information.

The evolution of threats from traditionally large conventional forces to decentralized entities has increased both the requirement for and challenges to today's sensor and collection efforts. Joint Task Force X (JTF X) is Canada's modern day human intelligence (HUMINT) unit, responsible for the provision of strategic, operational and tactical HUMINT resources in support of DND/CAF programs and operations. To achieve its mandate, JTF X must select and force generate source handlers and interrogators from within the CAF.

WHAT IS HUMINT?

HUMINT is a category of intelligence derived from information collected and provided by human sources. It is the oldest form of intelligence collection and its contribution to recent operations continues to demonstrate its effectiveness as a collection capability and force multiplier. HUMINT is critical to understanding how threat actors function within today's operational environments, including the enemy's intent, gaining an appreciation of social norms, customs and values, individual and collective patterns of life, and opinions. This enables the CAF to better predict, prevent or protect against a threat actor's intent and activities. As such, it remains imperative that the CAF retain the ability to ensure a highly trained, equipped and capable group of HUMINT specialists to accomplish this high pay-off task.

HOW TO COLLECT HUMINT?

Although HUMINT operators are always looking for technological advancements to augment their capabilities, the core aspect of the discipline remains the ability to interact with and gain information from individuals. HUMINT operations include a wide range of activities, such as source/agent handling, interrogation, debriefing and counter-intelligence. HUMINT operators will adapt their operational profiles and tradecraft for each of these activities based on the level of threat, operational environment, and individuals that they are interacting with. Within these activities, source handling and intelligence interrogation operations are two disciplines that provide an extensive and sustained flow of information of intelligence value.

SOURCE HANDLING

Source handlers apply their tradecraft through interactions with a willing individual to answer a commander's Primary Information Requirements. Source handlers are required to identify, recruit and develop sources based on a variety of criteria utilizing skills both inherent and trained. They can be employed in all environments, from permissive to hostile. As a result, source handler selection seeks individuals with diverse attributes such as mental agility, flexibility, social adaptability, patience and leadership, coupled with high standards of communications skills, physical fitness, robustness and an ability to work in small teams.

INTERROGATION

Intelligence Interrogations Operations (IIOps) are significant contributors to the HUMINT collection capability that entails methodical and sustained questioning of individuals in support to operational planning and execution. IIOps require interrogators to be highly resilient, flexible, patient and professional individuals. The highly sensitive nature of IIOps means that interrogators are expected to consistently display the highest level of ethical behaviour; abiding by the laws and policies that regulate the conduct of these operations. Like source handlers, interrogators must undergo a mentally strenuous training program preparing them to deal with the wide array of personalities, languages, levels of hostility, and racial and ethnic backgrounds of individuals that they must work with.

THE SELECTION PROCESS

The selection process is both rigorous and extensive; requiring candidates to think "outside the box", as well as demonstrate maturity, superior cognitive skills, strong interpersonal qualities and leadership. Successfully selected candidates will embark on the challenging Source Handler Operator's Course or Interrogator Course, lasting 18 and 12 weeks respectively. Both courses are extremely demanding, with only the most capable candidates graduating and being offered the opportunity to join the ranks of JTF X. Upon posting to JTF X at CFB Kingston, graduates will undergo continuation training, including advanced weapons handling, security and survival skills and specialty tradecraft, in order to attain the high readiness status expected of all operators within the unit. Members of JTF X are regularly deployed on different taskings all over the globe and are expected to maintain a high level of fitness and operational readiness during the length of their posting at the unit.

JTF X is continuously accepting candidate applications for the Source Handler Assessment Centre (SHAC) and Interrogator Assessment Centre (IAC). If you are interested in a rewarding, challenging and radically different career opportunity, please contact the Recruiting and Selection Officer via DWAN intranet email at +SHAC@CFINTGP HQ@OTTAWA-HULL or at +IAC@CFINTGP HQ@OTTAWA-HULL or via CSN at 271-7803. ◆

A source provides information to JTF X source handlers during a training exercise.

Election of the Anglican Bishop Ordinary a first for to the CAF

For the first time in history, Anglicans in the CAF have chosen their own Bishop.

A cross section of delegates lay and ordained, representing Anglicans from across the CAF, dialed into a conference call and were greeted by the Primate of the Anglican Church of Canada. After receiving the Primate's Charge, and saying Morning Prayer together, they proceeded to vote electronically for one of the four nominees for Bishop Ordinary to the CAF.

In the past, the Bishop for the Anglican Military Ordinariate (AMO) was appointed by the Primate (the senior bishop within the national church) from among serving or retired bishops. Several years ago, the Anglican Clericus, a group consisting of Anglican chaplains in the CAF, raised the vision of electing its own bishop. The proposal was approved March 5, and the vision became a reality.

The current bishop, Peter Coffin, was appointed 12 years ago when he was still Bishop of the Diocese of Ottawa. The new bishop, Colonel Nigel Shaw, will be consecrated Anglican Bishop Ordinary to the CAF in Ottawa, on May 28.

Col Shaw served in a number of units over his distinguished military career his last was as Director of Chaplain Operations in NDHQ. He continued to foster his vocation as priest by volunteering at local Anglican parishes, participating in military chapels, and by accepting leadership positions within the AMO such as Treasurer and, finally, Archdeacon.

Col Shaw understands the unique challenges families face in the CAF and looks forward to moving to a role where he can devote more of his time and energy to offering compassionate, pastoral care to CAF members and their families. The Royal Canadian Chaplain Service's moto is "Called to Serve". Bishop Elect Shaw has been called to serve in a unique ministry. He has answered the call and is ready, aye, to serve as the Anglican Bishop Ordinary to the CAF.

Col Nigel Shaw

BASE RENTAL ADJUSTMENTS ARE ROUTINE ANNUAL PROCESS

CFB SHILO

Regardless of whether a CAF member lives in private-sector od DND housing, rental adjustments are a routine annual proce's.

In December 2015, occupants of DND housing received their yearly letter from the Canadian Forces Housing Agency detailing their rent adjustments for fiscal year 2016.

This vision is top of mind for CFHA in it management of the more than 12 000 military housing units across 25 sites, including CFB Shilo, and as it applies Government of Canada policies and department regulations.

— Shilo Stag

PHOTO: Jules Xavier

CFB Shilo PMQ construction.

CAF, PARK CANADA TAKE AIM DURING OP PALACI

CFB SHILO

For more than five decades, the CAF and Parks Canada have been preventing avalanches using the best known method: creating avalanches.

For this year's rotation, 17 members of the Avalanche Control Troop have deployed to Op PALACI and have been through extensive training to prepare for avalanche control operations.

If a snowpack is deemed unstable, Parks Canada calls upon the CAF members to perform avalanche control operations. A C3 105mm Howitzer is used.

To read the full stories go to: **www.cfgateway.ca**

— Shilo Stag

Artillery BC/CFB Shilo

4 WING DRUMMERS SHARE CENTRE STAGE WITH JOHNNY REID

4 WING COLD LAKE

An opportunity presented itself for some members of the 4 Wing Pipes and Drum recently, as they shared centre stage with country music star Johnny Reid.

In the show opener "My Heart Beats Like a Drum", pipe band drummers Captain James Bezanson, Capt Vanessa Fulford and Lieutenant Diane Grimm marched out and provided a unique drum line to Reid's hit song.

Cold Lake Courier

PHOTO: Kyle Wall

Drummers from the 4 Wing Pipe and Drums hit the big time, performing with Johnny Reid at his recent Cold Lake show.

RESERVIST shares path to enlightenment through MARTIAL ARTS

CFB ESQUIMALT

Captain James Eke's studies with acclaimed martial arts legend Dan Inosanto has led him to impart that wisdom to a larger audience.

The Captain at 5th Field B.C. Regiment recently penned *Warriors Way: A Guide to Lifelong Learning in Martial Arts*, in which Capt Eke traces his three decades of study under world-famous Filipino-American martial arts instructor. That relationship helped him develop this literary expression of Inosanto's teaching.

For the full story go to **www.lookoutnewspaper.com**

— Lookout

PHOTO: James Eke

PETAWAWA EMPLOYMENT SERVICE can help find local jobs

CFB PETAWAWA

The Petawawa Military Family Resource Centre understands that being posted to a new town is difficult enough without having to worry about finding work.

The wait time to see an employment counselor is within two business days and there are no fees for any of the services.

The Petawawa Employment Service now has a counselor in place to help military partners find their footing int he local job market.

— Petawawa Post

THREE VETERANS receive HONOURS from the CHINESE GOVERNMENT

17 WING WINNIPEG

Three Winnipeg soldiers, veterans of the Battle of Hong Kong, have been presented with the Chinese Peace Certificate and medal, more that 74 years after they fought and were captured in the Battle of Hong Kong.

The three members of the Winnipeg Grenadiers were: George Peterson, George Nobiss and Harry Hawrychuk, all captured in the battle December 1941.

— VOXAIR

CC-177 GLOBEMASTER delivers the CAF to the Arctic

17 WING WINNIPEG

CAF members at 17 Wing Winnipeg flew to Resolute on a Boeing C-17 Globemaster military transport jet, one of five flown by the RCAF, to participate in and report on Exercise ARCTIC RAM 16.

— VOXAIR

WHITEHORSE CARRIED OUT JOINT EXERCISES WITH US COAST GUARD

CFB ESQUIMALT

In the early morning hours on February 18, HMCS *Whitehorse* sailed into Alaskan waters and conducted a series of exercises in order to enhance interoperability with the United States Coast Guard Cutter Liberty. The two vessels manoeuvred in formation until an American SH-60 Seahawk helicopter from Coast Guard District 17 arrived to conduct a series of helicopter hoists.

For the full story go to **www.lookoutnewspaper.com**

— Lookout

HMCS *Whitehorse* continued its maritime security patrol along Canada's west coast before returning home in early March.

Operation HONOUR
LEADERSHIP, RESPECT, and HONOUR

SURVEY

on inappropriate sexual behaviour in the CAF

A voluntary survey is being conducted, to help the CAF better understand the scope of inappropriate sexual behavior and the impact it is having on members.

Statistics Canada will be conducting a voluntary and confidential 25-minute survey on Sexual Misconduct in the Canadian Armed Forces with Regular Force and Primary Reserve CAF members until May 13. This survey is a key component of Operation HONOUR that will help determine the scope of inappropriate sexual behaviour in the CAF, better understand the impact it is having on CAF members and help guide an action plan for Operation HONOUR.

The results will provide vital information to the future of the CAF. Harmful and inappropriate sexual behaviour has a far-reaching, negative impact on morale, cohesion, effectiveness, deployability, recruiting, and retention. Any form of harmful and inappropriate sexual behaviour is a threat to operational readiness.

Input is crucial to a better understanding of this problem, and will enable the CAF to more effectively eliminate harmful patterns of behaviour, give support to those who have been affected, and improve policies, programs, workplace environment, and member well-being. Results of the survey will be of greater value if there is maximize participation, as this will gather more accurate information to address this problem. Taking just 25 minutes to complete the survey is an opportunity for all to contribute to the betterment of our institution.

Accordingly, the Chief of the Defence Staff and the Canadian Forces Chief Warrant Officer strongly encourage all members to complete this survey. All CAF members deserve a professional work environment where they are treated fairly, respectfully, and with dignity.

As Canada's national statistics agency, Statistics Canada was contracted by the Canadian Armed Forces to conduct this survey, given their vast expertise and infrastructure in conducting and analyzing large surveys, including those on sensitive topics. The survey is being conducted under the authority of the *Statistics Act*, which ensures that any information members provide will be kept completely confidential and used only for statistical and research purposes.

For more information on the survey, please visit the **intranet.mil.ca** and click on Resources – Harmful and inappropriate Sexual Behaviour.

Basic Mountain Operations course, of Primary Reserve students from 32 Canadian Brigade Group, Toronto units, cross the Grand River using a rope bridge during a basic mountain operations course at Elora Gorge Park, Ont.

PHOTO: Sgt Precious Canandang

DEFENCE ETHICS PROGRAMME / PROGRAMME D'ÉTHIQUE DE LA DÉFENSE

Defence Ethics Programme

Commentary:

Discussing lunch hour

The December fictional scenario discussing working hours, productivity, fair testament and collective agreements, clearly struck a chord with readers. Receiving 17 replies within the first week of publication, it appears there are many workplaces where this issue has come to mind.

ENSURING FAIR STANDARDS

Many readers responded by stating that office behaviours should look as much like the collective agreement as possible; therefore, Sophie is correct in her thinking. In terms of values, the reasoning is that we should follow the agreed-upon rules (obey and support lawful authority). The rules were put in place to ensure fair standards (integrity), and help curb the waste of public resources (supporting stewardship).

KNOWING YOUR CO-WORKERS

In this situation, Sophie feels she is being singled out to work longer hours than anyone else on her team. Unless there is some compensatory factor that she has overlooked on the other side of the equation, she may have grounds for concern if other staff take a longer lunch than she does. However, it is worth asking how much Sophie knows about the work styles of the staff. She should probably also raise the issue in confidence with the boss first if it is troubling her, rather than sowing discontent among the team with casual and possibly indiscreet claims. Additionally, we would hope that the answers Ibrahim gave her do not reflect the values of the team as a whole. If some unionized staff members are spending considerably less time than others actually working – meaning spending much of the day idle by choice – then this is a problem for the team and the public. But just as being at their desk does not prove employees are working, being away from their desk does not prove they are not working.

There are perhaps two distinct issues here. The one we have addressed is the actual and apparent fairness within the team. The second is the relative priority or completeness of the written rules in the larger context and across all teams, including this one.

The DND directorate for Civilian Labour Relations describes the relevant regulations as follows:

Employees of the Department of National Defence are represented in 18 of the 27 collective agreements in the core public administration, many of which contain their own unique group-specific provisions. Hours of work are specified within the applicable collective agreement. Therefore, the circumstances surrounding each situation must be considered on a case-by-case basis by management, who has to meet their operational requirements while respecting the flexibility provided in the relevant collective agreement.

WORK HOUR INTERPRETATION

What would a literal interpretation of the work hours really look like? Imagine an office where employees have their washroom breaks timed, where every minute of pleasantries shared in the hallway is deducted since such talk is not genuine work, and where a staff lunch (one that is not a staff work meeting) can never be outside the office because it is impossible to go, eat, and return in the space of half an hour. Such an office would probably not have good morale. It certainly sounds like a low-trust environment that might well be afflicted by presenteeism (present but disengaged employees) and consequent productivity loss and high turnover, which will have a major impact on value for public money as well. Unhappy workers tend to be poor performers.

Flexibility, trust, and discretion are more compatible with the highest goal of respecting the dignity of all persons. Of course, managers must ensure a fair workplace, enforce the written rules to the letter when it helps them achieve that fairness for all.

Telework and occasional unpaid overtime, such as voluntarily skipped breaks when trying to finish an urgent task, are examples of arrangements within the formal rules. Many workers welcome the flexibility, and policies support such arrangements where a mutual benefit between employers and managers exists. Of course, different managers bring different personal values to their teams, and different teams have different operational requirements, so actual practices will vary. But these practices must strive for fairness – and remain within the overall envelope of the rules.

Comparisons between civilian employees and military members working side by side may pose some additional difficulties, as a few readers suggested.

Suggestions for future scenarios are always welcome at: +Ethics-Ethique@ADM(RS) DH-PwOttawa-Hull.

ENHANCING THE NAVY'S PROTECTION AGAINST MODERN THREATS

A digital radio frequency memory jammer onboard an unmanned vessel during trials at of Rim of the Pacific (RIMPAC) 2014. RIMPAC is the world's largest international maritime exercises comprised of nations with an interest in the Pacific Rim region.

Defence Research and Development Canada's (DRDC) Radar Electronic Warfare team aims to provide the RCN with the technology needed to defend against threats to its fleet.

"The objective of the project is the improved defence of naval ships against modern anti-ship missiles," explained Frederic Arpin, lead defence scientist for the project at DRDC. "Improvements to current and future threats mean the RCN have less time to defend themselves. It has become increasingly difficult with opponents having improved electronic protection measures to move threat targeting off the ship."

A project is moving forward within the RCN to obtain two-to-four systems for an operational evaluation.

"The project is going to allow us to purchase some commercial jammers because what we developed is experimental. It's not rugged or combat ready in any sense," said Mr. Arpin.

DRDC prepared the specifications for the project based on years of lessons. The jammer technology has evolved over 10 years of trials and data analysis. The first proof of concept was demonstrated with a basic noise jammer that tested its effect on threat simulators.

"The noise jammer was basically passive, we knew the frequency of the threat simulator and we just output noise," said Mr. Arpin.

The next step was to develop a coherent digital radio frequency memory (DRFM) jammer to target cutting-edge threats.

"The DRFM jammer captures and digitizes the incoming radio frequency pulse which the threat is transmitting. Next it stores and retransmits a modified signal which indicates a false target with different coordinates and a different signature," said Mr. Arpin. "This technology is a smarter way of defeating the threat."

The DRFM jammer is fitted on an unmanned vessel or drone, off-board of a nearby ship that would be the target of the threat. The jammer works on incoming frequencies and can either make the threat attack the unmanned vessel, thus protecting the main target, or modify the signal to misdirect the threat away from both the unmanned vessel and the target ship. Either outcome protects the lives of sailors on-board nearby ships.

"After a jammer was suggested, I red [Mr. Arpin] came up with the idea of putting the jammer on an autonomous vessel. That way, no people were needed on the vessel to operate it," explained Lieutenant-Commander Timothy Bromige, former Staff Officer Electronic Warfare at Canadian Forces Maritime Warfare Centre.

The project is part of the Technical Cooperation Program Anti-ship Threat Project Arrangement (TAPA) program. The Technical Cooperation Program is an international organization that collaborates in defence scientific and technical information exchange and shared research activities for five nations: Australia, Canada, New Zealand, the United Kingdom and the United States.

"TAPA is very much cutting edge, looking five-to-10 years into the future. That's where you want to be," explained LCdr Bromige.

TAPA conducts trials every two years as part of Rim of the Pacific (RIMPAC) exercise and is one of the highest priority experiments since 2006. RIMPAC is the world's largest international maritime exercises comprised of nations with an interest in the Pacific Rim region. It is conducted from the Hawaiian Islands and Pearl Harbor and provides an important training opportunity and a means to strengthen military-to-military partnerships.

"RIMPAC is good because the ships are already there. We leverage all the international partners and assets. One of the tests we did in 2014 needed five ships, one Canadian ship, one Australian ship and three ships from the US. We need a mix of different international assets to be able to run certain tests," said Mr. Arpin, who is also the National lead for TAPA at DRDC.

"RIMPAC gives an immediate benefit to the participating Navies," said LCdr Bromige. "There is cross pollination between the Navies that take part, leveraging others work. It is not just what you do. Over the years working together and getting to know what each party wants and knows – the continuity – it's like a marriage." ◆

SNOW REMOVAL IS SWEET at CAF base

Troops at 5th Canadian Division Support Base (5 CDSB) Gagetown have found a way to deal with snow and ice removal that is both more efficient and more environmentally responsible than the rock salt used in many Canadian municipalities. And it smells just like molasses cookies.

The Technical Services Branch (TSB) of 5 CDSB Gagetown spent nearly a year researching ways to improve snow and ice control on the base, which is Canada's second-largest with more than 1000 kilometres of roads.

Major Gord Bennett, who commands the base's Transportation Company of the TSB, researched and found a solution in the form of road brine, which is a mix of salt, water and other additives, as well as locally sourced industrial molasses, which accounts for the pleasant smell. Molasses is already used in commercial brine operations throughout southern Ontario and New Brunswick. Other brine mixes developed by private industry in the US include juices left over from the production of beet sugar.

Maj Bennett said the molasses ensures the brine sticks to the pavement, unlike rock salt which gets ploughed or swept off with multiple passing vehicles. The brine requires fewer applications, resulting in significant savings.

PHOTOS: Sgt Shane Lizzo

The photos show the effects of brined versus unbrined roads, when the brine is applied to break ice buildup. After 24 hours, the brined road is almost completely clear of ice.

BENEFITS OF USING BRINE INCLUDE:

- Causes less environmental damage
- Helps falling snow melt sooner when applied prior to a storm
- Helps prevent ice buildup when traffic packs down the snow
- Enables ice buildup to be peeled off easier, shortening ploughing time
- Improves road conditions for a longer time period per application
- Works to -21°C while road salt is typically effective to -16°C.
- Less vehicle corrosion
- Saves fuel
- Saves on the cost of salt
- Reduces labour costs
- Reduces wear and tear on trucks and equipment
- Lowers risk of operator injury in collisions during bad weather

Brine is a more efficient use of salt, he added. When mixed into a brine, a kilogram of salt will cover an area 10 times larger than dry salt alone. Previously, almost 500 tons of salt was spread on 5 CDSB's roadways each year, Maj Bennett said. Spring runoff has increased salt levels in local freshwater bodies "to a level comparable to that of the ocean."

Various independent estimates suggest that brine reduces salt use by as much as 90 per cent, Maj Bennett added.

Tests were conducted in the winter of 2015/16 on brined versus unbrined roads to demonstrate effectiveness. Two applications of brine in a 24-hour period were given to certain base roadways after ploughing following a blizzard. Both applications were not proactively applied as is normal practice, but were applied to break ice buildup. The accompanying photos show the results. Within 24 hours, the first road was almost entirely clear while the second still had a significant amount of ice on it.

Other tests and research are continuing, including looking for biodegradable material to replace or add to traction sand.

In the spring, the molasses residue does not attract pests or accumulate on the roadside, noted Maj Bennett.

"The quantity of molasses is not significant enough to attract wildlife and dissipates with rain. There isn't enough to feel or make a sticky mess on the road. Being mixed with the dirt on the road also does not make it palatable for animal tongues. We've also not seen any changes in wildlife activity with it on the base." ◆

IT ALL STARTS HERE:
HEALTHY MOUTH, HEALTHY BODY

April is National Oral Health Month

Most of us realize that diet and exercise play an important role in keeping us healthy. But did you know that a healthy mouth is also an important part of a healthy body?

Although the mouth is part of the body, we often think of it as something separate. We often ignore bleeding or tender gums, while an irritation or pain elsewhere in the body would mean a trip to the doctor.

Poor oral health can affect a person's quality of life. Oral pain, missing teeth or oral infections can influence the way a person speaks, eats and socializes. These oral health problems can reduce a person's quality of life by affecting their physical, mental and social well-being.

The reality is oral health problems could be a sign of something serious, such as oral cancer. Every year, approximately 3200 Canadians are diagnosed with oral cancer and 1050 deaths from oral cancer occur. This devastating disease has a low survival rate because it is often diagnosed very late. With early detection the survival rate of oral cancer can be greatly improved.

Everything that happens in your mouth affects your whole body, which is why it is so important to visit your local Dental detachment or dentist office for a regular dental exam. Dental officers have the training, skills and expertise to properly address your oral health care needs. Regular dental exams help prevent small problems from getting worse.

Research has shown there is an association between oral disease and other health problems, such as diabetes, heart disease and stroke, respiratory illness in older adults, as well as pre-term and low-birth-weight babies. Although researchers are just beginning to understand this relationship, evidence shows that oral disease can aggravate other health problems and that keeping a healthy mouth is an important part of leading a healthy life.

As April is National Oral Health Month, the Royal Canadian Dental Corps team is dedicated to improving the health of the military. Go see your dental team regularly so they can help you enjoy the best overall health possible. ◆

Canadian support at the Iditarod

Members of the CAF Detachment Elmendorf, located at Joint Base Elmendorf-Richardson (JBER) Alaska, cheered on Canadian dog sled teams during a recent well-known race in Alaska.

The Iditarod is an incomparable dog sled race, traversing more than 1600 kilometres of the roughest and most beautiful terrain on Earth.

Wearing matching maple leaf toques and mitts, CAF members and their families gathered to cheer on the Canadian mushers participating in the 2016 Iditarod ceremonial start in downtown Anchorage.

Responsible for an entire block of the trail, the Canadians in attendance, together with other volunteers, worked tirelessly with shovel and rake to maintain the snow trail for the passing 86 sled dog teams.

Prior to the Iditarod's ceremonial start, members of the CAF Detachment Elmendorf and their families had the opportunity to meet three of the Canadian mushers at the Detachment Mess. ◆

ASK THE EXPERT

EXERCISE AND MENOPAUSE

Q: My sister is four years older than me and she is already experiencing menopause. Unfortunately she is having significant symptoms and so did our mother. Given my family history, I am concerned I will experience a challenging menopause. I have been very active my entire life and wonder if regular exercise will help me better cope when my change of life occurs.

—Manon

A: Dear Manon:

Great to hear you are committed to active living. Every woman experiences menopause differently. Some women have mild symptoms, while others like your sister and mother have a much harder time. In addition to symptoms, it is important to remember that menopause increases the risk of certain diseases such as breast cancer, cardiovascular disease and osteoporosis. Good news is there are things you can do to help fight the effects of menopause and regular exercise is one of them.

The benefits exercise offers to menopausal women do not appear to be related to correcting the hormonal changes that occur with this condition. Rather the effects seem to be a result of the short- and long-term benefits that regular exercise offers everyone. These benefits include increased cardiovascular fitness, lower bad fats, higher good fats, reduced body fat, increased muscle mass, reduced anxiety and depression and enhanced feelings of well-being. Some studies have also shown regular exercise can reduce fatigue, chronic muscle pain, decrease the intensity of hot flashes, improve sleep and increase bone mass or at least reduce that rate of bone loss.

To achieve these benefits you do not need to train like an Olympian. What you do need to do is exercise "regularly" and ensure your program includes three basic components. Cardiovascular activities such as walking, marching, running, swimming and cycling for 150 minutes a week at a moderate intensity or 75 minutes a week at a higher intensity. Strength training activities such a core work, weights, yoga, and calisthenics – try this three times a week. Flexibility work – such as stretching and yoga – incorporate into every workout. It is important to note that to increase your bone mass or reduce the rate of bone loss you need to do impact activities and exercises where your muscles pull on bones – you will get this from your cardiovascular and strength training.

The bottom line is that regular exercise probably won't eliminate all of your menopausal symptoms. What it will do is help you cope better with your symptoms and hopefully reduce your risk of developing the serious diseases that become more common after menopause. Menopause may change your life, but regular exercise is life changing!

–Dr. Darrell Menard, MD Dip Sport Med
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For more information on taking control of your health and well-being, please visit Strengthening the Forces.

KEEPING THE DEFENCE TEAM HEALTHY

THE SITTING DISEASE:
How we need to change the way to we work

Every time we turn around there is a report about something, seemingly innocuous, that is no longer good for us. The list now includes the mere act of sitting at your desk.

Last month, ADM (HR-Civ) hosted a workshop that helped attendees find more healthful ways to work. Presented by Dr. Chris Raynor, a local orthopaedic surgeon and personal trainer, who is also a reservist with the 1st Canadian Field Ambulance. Dr. Raynor presented compelling evidence against sitting at a work station for hours on end.

Studies have shown a link between sitting time and chronic diseases such as diabetes, myocardial infarction (heart attack) and cardiovascular disease. The risk and instances of physical disease increase with age; but sitting time also increases with age. Research shows that even when taking this into consideration, there is a higher incidence of disease associated with sitting.

"Even if you go to the gym and work out hard for two hours, the effects from sitting all day is essentially independent from that exercise," he explained. "So, while it's probably better to work out, the negative effects of sitting is not counteracted by the exercise."

BLOOD GLUCOSE/INSULIN LEVELS AND DISEASE

Those who sit throughout the day have higher blood glucose and insulin level than people who exercise or move throughout the day. Glycemia, caused by high blood glucose, is associated with a number of problems, such as damaged organs, fatigue, excessive thirst, excessive hunger, and poor wound healing. None of the organs in your body function properly with a high sugar level.

Insulin is the hormone that tells your body where to put that sugar so it doesn't just sit in your bloodstream.

"If you have a high blood glucose level you need a lot of insulin in order to deal with it," he explains. "If you have high blood glucose you need high insulin. High insulin leads to diabetes, coronary artery disease, high blood pressure and weight gain."

ARE YOU ALL JUMPING OUT OF YOUR NICE COMFY CHAIRS YET? WAIT, THERE'S MORE.

The top complaints Dr. Raynor hears from patients are pain in the shoulder, lower back, neck, and wrist – most common being the lower back. Other complaints include headaches, numbness/tingling in the upper and lower extremities, shooting pain into the lower extremities, blurred vision and the inability to focus as the day progresses.

WHAT'S REALLY CAUSING THE PAIN?

Dr. Raynor says all this pain and discomfort is often a matter of bad posture.

As the workday progresses we tend to slump more. This has a detrimental effect on our spinal column and our lungs. The rib cage and thorax compress and we're less able to expand our lungs and take in oxygen. The brain is not getting enough oxygen and cannot function as efficiently.

The ideal posture according to Dr. Raynor (see illustration), is sitting at attention (C), although for people to do that for any length of time can be difficult. Sitting with a bit of a forward lean (D) is probably what people should strive for. Throughout the day most people tend to adopt a slouching (A) or forward head posture (B).

The core abdominal and lower body muscles also have an effect on back pain. The forces or 'pull' exerted by the muscles that are under consistent tension while sitting, cause a rotation of the pelvis, which in turn negatively affects lower spine giving it a more flexed position.

WHAT CAN WE DO TO MITIGATE THOSE EFFECTS.

A typical day for many office workers goes like this: We sit down for breakfast, sit on the commute to work, sit in front of a computer in the morning, sit to eat lunch, sit again at our workstation again in the afternoon, sit on the bus on the way home, sit to eat dinner, and watch TV on the couch until we head to bed. Dr. Raynor estimates sitting takes up on average 15.5 hours per day, and he adds a 30-minute exercise period and eight hours for sleep to make the day.

"That little bit of exercise you did, and I don't care what intensity level you're working at, when you take one to two hours and you try to put it up against 22 hours of being sedentary, it's not really going to have that much of an effect," he explained.

SO WHAT DO WE NEED TO DO?

- Get up and move around every half hour to an hour. If you have a tendency of getting in a 'zone' while working set an alarm on your computer, watch or phone.
- Stretch, at home (while watching TV during the commercials) and in the workplace. Focus on your lower extremities: hamstrings, calves, hips, and low back and hold the stretch for 30 seconds.
- Drink lots of water. This keeps the muscles well hydrated and thus helps with flexibility. Dr. Raynor suggests that we don't necessarily need to drink eight glasses of water per day; the focus should be on keeping hydrated.
- If working on the same floor or in a cubicle-oriented setting, go to the person's office instead of calling or emailing.
- Limit sitting for too long in one position. Dr. Raynor suggests 20 minutes is too long. While it's not necessary to stretch every 20 minutes (he suggests every hour) you should at least change your position.
- Use the stairs instead of the elevator whenever possible.
- Lift weights. Dr. Raynor suggests that everyone should be lifting weights. "People who lift weight have better balance, higher bone density, better lean muscle mass, and better overall health." And it doesn't have to be hundreds of kilos either.

VARYING POSITIONS IS KEY

Dr. Raynor suggests that one of the best workplace exercises to do is the simple squat, five to 10 reps every 30 to 45 minutes to keep the blood pumping.

"In many parts of the world squatting is considered a resting position," he said "Yet, most of the people I see can't squat properly and can't hold it for very long."

The phenomenon of the standing workstation is becoming more widespread. You may have seen one on your floor. Dr. Raynor pointed out that replacing sitting with standing is only marginally better for your health.

A. Slouched Sitting

B. Forward Head Posture

C. Sitting at Attention

D. Proper Sitting Posture

"You're still in one position," he said. "It's much better to change your position throughout the day. If you can alternate your workstation between standing to sitting it's marginally better, but movement is the best."

HOW ABOUT THOSE INFLATABLE BALLS PEOPLE SIT ON?

Because the ball is bouncy it may feel better to you but the actual force of compression in the body doesn't change. It's also harder to control the movement of your torso and this may even increase the compression on your hips. Dr. Raynor suggested that people sit on a rigid chair and change position often.

WHAT ABOUT PEOPLE SITTING WITH THEIR LEGS CROSSED?

People tend to cross the same leg all the time and that can lead to one side being stronger than the other. Dr. Raynor suggested, if you cross your legs while sitting, it's important to alternate legs from time to time.

"Your body is very lazy," he explained. "If you do something all the time your body gets used to that position and certain muscles are tightened while others are loosened which can lead to a weak side and a strong side. What we're trying to do is achieve balance." ◆

3 RCR soldiers conduct a simulated attack near Namsos, Norway during Ex COLD RESPONSE.

Des militaires du 3 RCR mènent une attaque près de Namsos, en Norvège, pendant l'ex COLD RESPONSE.

EX COLD RESPONSE

In Norway, early March, CAF members participated as the enemy force in Exercise COLD RESPONSE 2016 (Ex CR16).

Three hundred Canadian soldiers, mostly of 3rd Battalion, The Royal Canadian Regiment (3 RCR) — from 2 Canadian Mechanized Brigade Group (2 CMBG) in Petawawa — participated in the exercise. Their mission as the enemy force was to delay the advance of the massive main body of soldiers, armoured vehicles, heavy armour, artillery, naval support, and aircraft towards the Norwegian town of Grong.

The enemy force was led by Multinational Battle Group Commander Lieutenant-Colonel Will Graydon, who commanded 3 RCR, as well as forces from Sweden, Norway, and one company of American M1-Abrams tanks and TOW Humvees.

Ex CR16 is a biennial, Norway-led exercise that brings together thousands of soldiers from NATO and other allied nations to conduct training in the challenging climate of Northern Norway. This year's CR16 included over 15 000 soldiers from 13 nations, including the United States, Norway, the United Kingdom, Sweden, Finland, the Netherlands, Belgium, Denmark, Germany, Latvia, Poland, Spain, and Canada.

Canadians have participated in Ex CR16 since 2010. Besides promoting interoperability and allied co-operation, conducting dynamic, scenario-based training in such a different winter climate offers unique challenges and training opportunities that Canadian soldiers cannot replicate at home.

"Exercise Cold Response offered participating countries an incredible opportunity to conduct high-intensity combat operations in a cold weather, force-on-force environment," said LCol Graydon. "The exercise allowed 3 RCR to further interoperability with our American allies and figure out how to operate with our Swedish headquarters, Finnish sister battalion, and Norwegian home guard attachments. It was a challenging exercise with lessons learned at every level, and excellent co-operation and cohesion between allied partners."

The adaptability required to work in an unfamiliar environment with several different militaries has helped hone the readiness and responsiveness demanded of Canadian soldiers, particularly as 2 CMBG prepares to assume the mantle of High Readiness for the Government of Canada in 2017. ♣

Soldiers from the 3 RCR, conduct a simulated attack near Namsos, Norway.

Des soldats du 3 RCR mènent une attaque près de Namsos, en Norvège.

LCol Will Graydon, commander of 3 RCR, Petawawa, reconnoiters the grounds where Ex COLD RESPONSE takes place in Namsos, Norway.

Le Lcol Will Graydon, commandant du 3 RCR, à Petawawa, procède à la reconnaissance des sites où se déroule l'ex COLD RESPONSE, à Namsos, en Norvège.

Soldiers from 3 RCR, conduct a simulated attack near Namsos, Norway.

Des soldats du 3 RCR mènent une attaque près de Namsos, en Norvège.

BGen Lowell Thomas, commander of 4th Canadian Division, speaks to 3 RCR troops about tactical downhill skis during the exercise.

Le Bgén Lowell Thomas, commandant de la 4e Division du Canada, parle aux militaires du 3 RCR des skis alpins tactiques utilisés durant l'ex COLD RESPONSE.

L'EXERCICE COLD RESPONSE

COLD RESPONSE 2016, exercice bisannuel mené par la Norvège, réunit des milliers de soldats de l'OTAN et d'autres pays alliés en vue d'un entraînement dans les conditions difficiles du nord de la Norvège. Cette année, l'exercice a permis de rassembler plus de 15 000 militaires de treize pays, à savoir les États-Unis, la Norvège, le Royaume-Uni, la Suède, la Finlande, les Pays-Bas, la Belgique, le Danemark, l'Allemagne, la Lettonie, la Pologne, l'Espagne et le Canada.

La première participation du Canada à l'ex COLD RESPONSE remonte à 2010. En plus de favoriser l'interopérabilité et la coopération entre alliés, l'exécution d'un tel entraînement dynamique fondé sur un scénario et tenu dans des conditions hivernales différentes présente des possibilités d'entraînement et des difficultés particulières que les militaires canadiens ne peuvent pas reproduire au pays.

« L'exercice COLD RESPONSE donne aux pays participants l'occasion incroyable de réaliser des opérations de combat de haute intensité par temps froid, dans un contexte d'affrontement de deux forces, explique le Lcol Graydon. L'exercice a permis au 3 RCR d'améliorer son interopérabilité avec ses alliés des États-Unis et de trouver une façon de travailler avec son quartier général suédois, son bataillon-frère finlandais et les militaires affectés à sa garde territoriale norvégienne. L'exercice s'est révélé éprouvant, mais nous en avons tiré des leçons à tous les égards, en plus d'avoir atteint un excellent niveau de coopération et de cohésion entre les partenaires alliés. »

La capacité d'adaptation nécessaire à l'exécution d'opérations en compagnie de nombreuses forces armées dans un milieu étranger a permis de perfectionner l'état de préparation et la capacité d'intervention qu'on exige des militaires canadiens, tout particulièrement au moment où le 2 GBMC se prépare à assumer le rôle d'unité à disponibilité élevée pour le gouvernement du Canada, en 2017. ◆

Au début mars, en Norvège, des militaires canadiens ont joué le rôle d'ennemis pendant l'exercice COLD RESPONSE 2016.

Trois cents soldats du 2e Groupe-brigade mécanisé du Canada (2 GBMC), à Petawawa, dont la plupart proviennent du 3e Bataillon, The Royal Canadian Regiment (3 RCR), ont participé à l'exercice. Leur mission, en tant que force ennemie, consistait à ralentir l'avance d'une force considérable composée de soldats, de véhicules blindés, de blindés lourds, d'artillerie et de soutien naval et aérien, se dirigeant vers la ville de Grong, en Norvège.

Le lieutenant-colonel Will Graydon, commandant du groupement tactique multinational, dirigeant la force ennemie, fl menait les soldats du 3 RCR, des militaires suédois et norvégiens, une compagnie de chars états-uniens M1-Abrams et de véhicules militaires tout-terrain équipés de lance-missiles TOW (Humvees).

Sgt Kris Rutter (left) and Cpl Brian Jozefowicz from 3 RCR wait for enemy action with a Carl Gustav recoilless rifle and C7 rifles.

Armés d'un fusil sans recul Carl Gustav et de fusils C7, le Sgt Kris Rutter (à gauche) et le Cpl Brian Jozefowicz, tous les deux du 3 RCR, attendant que l'ennemi passe à l'attaque.

Members of the US Marine Corps demonstrate an amphibious landing in an AAV-P7/A1 Assault Amphibious Vehicle at Ramsvika Bay, Norway.

Des militaires du United States Marine Corps effectuent un débarquement amphibie à bord d'un véhicule d'assaut amphibie AAV-P7/A1 à Ramsvika Bay, en Norvège.

3 RCR soldiers conduct a simulated attack near Namsos, Norway.

Des militaires du 3 RCR mènent une attaque près de Namsos, en Norvège.

PHOTOS: MCpl Chris Magyar Gasse